# BISR Result

## Case：

(row, col):

sMAT0: (0x123, 0x10), (0x10, 0x5), (0xdeadbeef, 0x219, 0xc), (0x200, 0x24), (0x19, 0x71), (0x123, 0x30)

(0x2A0, 0x10),

sMAT1: (0x2B0, 0x0), (0x54F, 0x49), (0x2B0, 0x17),

(0x2B1, 0x17)

sMAT23:(0x3FFF, 0x73), (0x3DD0, 0x12), (0x3FFF, 0x7F)

WL Redundancy: (0x10, 0x0), (0x11, 0x60)

BL Redundancy: (0x123, 0x1), (0x3D50, 0x0), (0x3D50, 0x1), (0x3D51, 0x1), (0x3D52, 0x1)

Cross: (0x1, 0x1)

As follow is the eventually result after sorting the normal error information.

/\*\*\*\*\*\*\*\*\*\*Check ERROR INFO :0\*\*\*\*\*\*\*\*\*\*\*\*\*/

rowaddr: 537, 0x219

coladdr: 12, 0xc

bMat : 0, 0x0

sMat : 0, 0x0

/\*\*\*\*\*\*\*\*\*\*Check ERROR INFO :1\*\*\*\*\*\*\*\*\*\*\*\*\*/

rowaddr: 672, 0x2a0

coladdr: 16, 0x10

bMat : 0, 0x0

sMat : 0, 0x0

/\*\*\*\*\*\*\*\*\*\*Check ERROR INFO :2\*\*\*\*\*\*\*\*\*\*\*\*\*/

rowaddr: 16, 0x10

coladdr: 5, 0x5

bMat : 0, 0x0

sMat : 0, 0x0

/\*\*\*\*\*\*\*\*\*\*Check ERROR INFO :3\*\*\*\*\*\*\*\*\*\*\*\*\*/

rowaddr: 689, 0x2b1

coladdr: 23, 0x17

bMat : 0, 0x0

sMat : 1, 0x1

/\*\*\*\*\*\*\*\*\*\*Check ERROR INFO :4\*\*\*\*\*\*\*\*\*\*\*\*\*/

rowaddr: 688, 0x2b0

coladdr: 0, 0x0

bMat : 0, 0x0

sMat : 1, 0x1

/\*\*\*\*\*\*\*\*\*\*Check ERROR INFO :5\*\*\*\*\*\*\*\*\*\*\*\*\*/

rowaddr: 1359, 0x54f

coladdr: 73, 0x49

bMat : 0, 0x0

sMat : 1, 0x1

/\*\*\*\*\*\*\*\*\*\*Check ERROR INFO :6\*\*\*\*\*\*\*\*\*\*\*\*\*/

rowaddr: 15837, 0x3ddd

coladdr: 18, 0x12

bMat : 7, 0x7

sMat : 23, 0x17

/\*\*\*\*\*\*\*\*\*\*Check ERROR INFO :7\*\*\*\*\*\*\*\*\*\*\*\*\*/

rowaddr: 16383, 0x3fff

coladdr: 115, 0x73

bMat : 7, 0x7

sMat : 23, 0x17

/\*\*\*\*\*\*\*\*\*\*Check ERROR INFO :8\*\*\*\*\*\*\*\*\*\*\*\*\*/

rowaddr: 16383, 0x3fff

coladdr: 127, 0x7f

bMat : 7, 0x7

sMat : 23, 0x17

/\*\*\*\*\*\*\*\*\*\*Check ERROR INFO :9\*\*\*\*\*\*\*\*\*\*\*\*\*/

rowaddr: 291, 0x123

coladdr: 48, 0x30

bMat : 0, 0x0

sMat : 0, 0x0

/\*\*\*\*\*\*\*\*\*\*Check ERROR INFO :10\*\*\*\*\*\*\*\*\*\*\*\*\*/

rowaddr: 25, 0x19

coladdr: 113, 0x71

bMat : 0, 0x0

sMat : 0, 0x0

/\*\*\*\*\*\*\*\*\*\*Check ERROR INFO :11\*\*\*\*\*\*\*\*\*\*\*\*\*/

rowaddr: 512, 0x200

coladdr: 36, 0x24

bMat : 0, 0x0

sMat : 0, 0x0

## Repair:

/\*\*\*\*\*\*\*\*\*\*\*\*Repair with BitLine\*\*\*\*\*\*\*\*\*\*\*\*\*\*/

====== This BL Redundancy @0 of sMat @0 is OK!

/\*\*\*\*\*\*\*\*\*\*\*\*\*\*Repair Info\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*/

===== err rowaddr: 537, 0x219

===== err coladdr: 12, 0xc

===== err sMat : 0, 0x0

===== redundancy: BitLine sMat :0, 0 th BL

/\*\*\*\*\*\*\*\*\*\*\*\*Repair with BitLine\*\*\*\*\*\*\*\*\*\*\*\*\*\*/

====== This BL Redundancy @0 of sMat @0 is used!

====== This BL Redundancy @1 of sMat @0 is Err!

====== This BL Redundancy @2 of sMat @0 is OK!

/\*\*\*\*\*\*\*\*\*\*\*\*\*\*Repair Info\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*/

===== err rowaddr: 672, 0x2a0

===== err coladdr: 16, 0x10

===== err sMat : 0, 0x0

===== redundancy: BitLine sMat :0, 2 th BL

/\*\*\*\*\*\*\*\*\*\*\*\*Repair with BitLine\*\*\*\*\*\*\*\*\*\*\*\*\*\*/

====== This BL Redundancy @0 of sMat @0 is used!

====== This BL Redundancy @1 of sMat @0 is Err!

====== This BL Redundancy @2 of sMat @0 is used!

====== This BL Redundancy @3 of sMat @0 is OK!

/\*\*\*\*\*\*\*\*\*\*\*\*\*\*Repair Info\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*/

===== err rowaddr: 16, 0x10

===== err coladdr: 5, 0x5

===== err sMat : 0, 0x0

===== redundancy: BitLine sMat :0, 3 th BL

/\*\*\*\*\*\*\*\*\*\*\*\*Repair with BitLine\*\*\*\*\*\*\*\*\*\*\*\*\*\*/

====== This BL Redundancy @0 of sMat @1 is OK!

/\*\*\*\*\*\*\*\*\*\*\*\*\*\*Repair Info\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*/

===== err rowaddr: 689, 0x2b1

===== err coladdr: 23, 0x17

===== err sMat : 1, 0x1

===== redundancy: BitLine sMat :1, 0 th BL

/\*\*\*\*\*\*\*\*\*\*\*\*Repair with BitLine\*\*\*\*\*\*\*\*\*\*\*\*\*\*/

====== This BL Redundancy @0 of sMat @1 is used!

====== This BL Redundancy @1 of sMat @1 is Err!

====== This BL Redundancy @2 of sMat @1 is OK!

/\*\*\*\*\*\*\*\*\*\*\*\*\*\*Repair Info\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*/

===== err rowaddr: 688, 0x2b0

===== err coladdr: 0, 0x0

===== err sMat : 1, 0x1

===== redundancy: BitLine sMat :1, 2 th BL

/\*\*\*\*\*\*\*\*\*\*\*\*Repair with BitLine\*\*\*\*\*\*\*\*\*\*\*\*\*\*/

====== This BL Redundancy @0 of sMat @1 is used!

====== This BL Redundancy @1 of sMat @1 is Err!

====== This BL Redundancy @2 of sMat @1 is used!

====== This BL Redundancy @3 of sMat @1 is OK!

/\*\*\*\*\*\*\*\*\*\*\*\*\*\*Repair Info\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*/

===== err rowaddr: 1359, 0x54f

===== err coladdr: 73, 0x49

===== err sMat : 1, 0x1

===== redundancy: BitLine sMat :1, 3 th BL

/\*\*\*\*\*\*\*\*\*\*\*\*Repair with BitLine\*\*\*\*\*\*\*\*\*\*\*\*\*\*/

====== This BL Redundancy @0 of sMat @23 is Err!

====== This BL Redundancy @1 of sMat @23 is Err!

====== This BL Redundancy @2 of sMat @23 is OK!

/\*\*\*\*\*\*\*\*\*\*\*\*\*\*Repair Info\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*/

===== err rowaddr: 15837, 0x3ddd

===== err coladdr: 18, 0x12

===== err sMat : 23, 0x17

===== redundancy: BitLine sMat :23, 2 th BL

/\*\*\*\*\*\*\*\*\*\*\*\*Repair with BitLine\*\*\*\*\*\*\*\*\*\*\*\*\*\*/

====== This BL Redundancy @0 of sMat @23 is Err!

====== This BL Redundancy @1 of sMat @23 is Err!

====== This BL Redundancy @2 of sMat @23 is used!

====== This BL Redundancy @3 of sMat @23 is OK!

/\*\*\*\*\*\*\*\*\*\*\*\*\*\*Repair Info\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*/

===== err rowaddr: 16383, 0x3fff

===== err coladdr: 115, 0x73

===== err sMat : 23, 0x17

===== redundancy: BitLine sMat :23, 3 th BL

/\*\*\*\*\*\*\*\*\*\*\*\*Repair with BitLine\*\*\*\*\*\*\*\*\*\*\*\*\*\*/

====== This BL Redundancy @0 of sMat @23 is Err!

====== This BL Redundancy @1 of sMat @23 is Err!

====== This BL Redundancy @2 of sMat @23 is used!

====== This BL Redundancy @3 of sMat @23 is used!

/\*\*\*\*\*\*\*\*\*\*\*\*Repair with WordLine\*\*\*\*\*\*\*\*\*\*\*\*\*\*/

====== This WL Redundancy @0 is OK!

/\*\*\*\*\*\*\*\*\*\*\*\*\*\*Repair Info\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*/

===== err rowaddr: 16383, 0x3fff

===== err coladdr: 127, 0x7f

===== err bMat : 7, 0x7

===== redundancy: WordLine bMat :0, 0 th WL

/\*\*\*\*\*\*\*\*\*\*\*\*Repair with BitLine\*\*\*\*\*\*\*\*\*\*\*\*\*\*/

====== This BL Redundancy @0 of sMat @0 is used!

====== This BL Redundancy @1 of sMat @0 is Err!

====== This BL Redundancy @2 of sMat @0 is used!

====== This BL Redundancy @3 of sMat @0 is used!

/\*\*\*\*\*\*\*\*\*\*\*\*Repair with WordLine\*\*\*\*\*\*\*\*\*\*\*\*\*\*/

====== This WL Redundancy @16 is Err!

====== This WL Redundancy @17 is Err!

====== This WL Redundancy @18 is OK!

/\*\*\*\*\*\*\*\*\*\*\*\*\*\*Repair Info\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*/

===== err rowaddr: 291, 0x123

===== err coladdr: 48, 0x30

===== err bMat : 0, 0x0

===== redundancy: WordLine bMat :1, 2 th WL

/\*\*\*\*\*\*\*\*\*\*\*\*Repair with BitLine\*\*\*\*\*\*\*\*\*\*\*\*\*\*/

====== This BL Redundancy @0 of sMat @0 is used!

====== This BL Redundancy @1 of sMat @0 is Err!

====== This BL Redundancy @2 of sMat @0 is used!

====== This BL Redundancy @3 of sMat @0 is used!

/\*\*\*\*\*\*\*\*\*\*\*\*Repair with WordLine\*\*\*\*\*\*\*\*\*\*\*\*\*\*/

====== This WL Redundancy @16 is Err!

====== This WL Redundancy @17 is Err!

====== This WL Redundancy @18 is used!

====== This WL Redundancy @19 is OK!

/\*\*\*\*\*\*\*\*\*\*\*\*\*\*Repair Info\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*/

===== err rowaddr: 25, 0x19

===== err coladdr: 113, 0x71

===== err bMat : 0, 0x0

===== redundancy: WordLine bMat :1, 3 th WL

/\*\*\*\*\*\*\*\*\*\*\*\*Repair with BitLine\*\*\*\*\*\*\*\*\*\*\*\*\*\*/

====== This BL Redundancy @0 of sMat @0 is used!

====== This BL Redundancy @1 of sMat @0 is Err!

====== This BL Redundancy @2 of sMat @0 is used!

====== This BL Redundancy @3 of sMat @0 is used!

/\*\*\*\*\*\*\*\*\*\*\*\*Repair with WordLine\*\*\*\*\*\*\*\*\*\*\*\*\*\*/

====== This WL Redundancy @16 is Err!

====== This WL Redundancy @17 is Err!

====== This WL Redundancy @18 is used!

====== This WL Redundancy @19 is used!

====== This WL Redundancy @20 is OK!

/\*\*\*\*\*\*\*\*\*\*\*\*\*\*Repair Info\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*/

===== err rowaddr: 512, 0x200

===== err coladdr: 36, 0x24

===== err bMat : 0, 0x0

===== redundancy: WordLine bMat :1, 4 th WL

## Map:

colRed: C0 C1 C2 C3

MAT 0: 8C 0 90 85

MAT 1: 97 0 80 C9

MAT 2: 0 0 0 0

MAT 3: 0 0 0 0

MAT 4: 0 0 0 0

MAT 5: 0 0 0 0

MAT 6: 0 0 0 0

MAT 7: 0 0 0 0

MAT 8: 0 0 0 0

MAT 9: 0 0 0 0

MAT10: 0 0 0 0

MAT11: 0 0 0 0

MAT12: 0 0 0 0

MAT13: 0 0 0 0

MAT14: 0 0 0 0

MAT15: 0 0 0 0

MAT16: 0 0 0 0

MAT17: 0 0 0 0

MAT18: 0 0 0 0

MAT19: 0 0 0 0

MAT20: 0 0 0 0

MAT21: 0 0 0 0

MAT22: 0 0 0 0

MAT23: 0 0 92 F3

colFuse:

ADDR: DATA:

88 40 | 89 49 | 8A 0 | 8B 0 | 8C 0 | 8D 0 | 8E 0 | 8F 0 |

98 2 | 99 10 | 9A 0 | 9B 0 | 9C 0 | 9D 0 | 9E 0 | 9F 0 |

A8 20 | A9 20 | AA 0 | AB 0 | AC 0 | AD 0 | AE 0 | AF 0 |

B8 0 | B9 0 | BA 0 | BB 0 | BC 0 | BD 0 | BE 0 | BF 0 |

C8 0 | C9 0 | CA 0 | CB 0 | CC 0 | CD 0 | CE 0 | CF 0 |

D8 0 | D9 0 | DA 0 | DB 0 | DC 0 | DD 0 | DE 0 | DF 0 |

8 0 | 9 0 | A 0 | B 0 | C 0 | D 0 | E 0 | F 20 |

18 10 | 19 0 | 1A 0 | 1B 0 | 1C 0 | 1D 0 | 1E 0 | 1F 40 |

28 20 | 29 20 | 2A 0 | 2B 0 | 2C 0 | 2D 0 | 2E 0 | 2F 80 |

38 41 | 39 1 | 3A 0 | 3B 0 | 3C 0 | 3D 0 | 3E 0 | 3F 24 |

48 0 | 49 2 | 4A 0 | 4B 0 | 4C 0 | 4D 0 | 4E 0 | 4F 40 |

58 20 | 59 24 | 5A 0 | 5B 0 | 5C 0 | 5D 0 | 5E 0 | 5F 92 |

rowRed:

7FFF 0 0 0 0 0 0 0

0 0 0 0 0 0 0 0

0 0 4123 4019 4200 0 0 0

0 0 0 0 0 0 0 0

0 0 0 0 0 0 0 0

0 0 0 0 0 0 0 0

0 0 0 0 0 0 0 0

0 0 0 0 0 0 0 0

0 0 0 0 0 0 0 0

0 0 0 0 0 0 0 0

0 0 0 0 0 0 0 0

0 0 0 0 0 0 0 0

0 0 0 0 0 0 0 0

0 0 0 0 0 0 0 0

0 0 0 0 0 0 0 0

0 0 0 0 0 0 0 0

rowFuse:

ADDR: DATA:

100 0 | 101 0 | 102 0 | 103 0 | 104 0 | 105 0 | 106 0 | 107 0 |

108 0 | 109 0 | 10A 0 | 10B 0 | 10C 0 | 10D 0 | 10E 1 | 10F 0 |

110 0 | 111 0 | 112 0 | 113 0 | 114 0 | 115 0 | 116 0 | 117 0 |

118 0 | 119 0 | 11A 0 | 11B 0 | 11C 0 | 11D 0 | 11E 0 | 11F 0 |

120 10 | 121 18 | 122 1C | 123 14 | 124 14 | 125 18 | 126 1C | 127 1C |

128 18 | 129 C | 12A 1C | 12B 1C | 12C 1C | 12D 1C | 12E 1C | 12F 0 |

130 0 | 131 0 | 132 0 | 133 0 | 134 0 | 135 0 | 136 0 | 137 0 |

138 0 | 139 0 | 13A 0 | 13B 0 | 13C 0 | 13D 0 | 13E 0 | 13F 0 |

140 0 | 141 0 | 142 0 | 143 0 | 144 0 | 145 0 | 146 0 | 147 0 |

148 0 | 149 0 | 14A 0 | 14B 0 | 14C 0 | 14D 0 | 14E 0 | 14F 0 |

150 0 | 151 0 | 152 0 | 153 0 | 154 0 | 155 0 | 156 0 | 157 0 |

158 0 | 159 0 | 15A 0 | 15B 0 | 15C 0 | 15D 0 | 15E 0 | 15F 0 |

160 0 | 161 0 | 162 0 | 163 0 | 164 0 | 165 0 | 166 0 | 167 0 |

168 0 | 169 0 | 16A 0 | 16B 0 | 16C 0 | 16D 0 | 16E 0 | 16F 0 |

170 0 | 171 0 | 172 0 | 173 0 | 174 0 | 175 0 | 176 0 | 177 0 |

178 0 | 179 0 | 17A 0 | 17B 0 | 17C 0 | 17D 0 | 17E 0 | 17F 0 |

180 0 | 181 0 | 182 0 | 183 0 | 184 0 | 185 0 | 186 0 | 187 0 |

188 0 | 189 0 | 18A 0 | 18B 0 | 18C 0 | 18D 0 | 18E 0 | 18F 0 |

190 0 | 191 0 | 192 0 | 193 0 | 194 0 | 195 0 | 196 0 | 197 0 |

198 0 | 199 0 | 19A 0 | 19B 0 | 19C 0 | 19D 0 | 19E 0 | 19F 0 |

1A0 0 | 1A1 0 | 1A2 0 | 1A3 0 | 1A4 0 | 1A5 0 | 1A6 0 | 1A7 0 |

1A8 0 | 1A9 0 | 1AA 0 | 1AB 0 | 1AC 0 | 1AD 0 | 1AE 0 | 1AF 0 |

1B0 0 | 1B1 0 | 1B2 0 | 1B3 0 | 1B4 0 | 1B5 0 | 1B6 0 | 1B7 0 |

1B8 0 | 1B9 0 | 1BA 0 | 1BB 0 | 1BC 0 | 1BD 0 | 1BE 0 | 1BF 0 |

1C0 0 | 1C1 0 | 1C2 0 | 1C3 0 | 1C4 0 | 1C5 0 | 1C6 0 | 1C7 0 |

1C8 0 | 1C9 0 | 1CA 0 | 1CB 0 | 1CC 0 | 1CD 0 | 1CE 0 | 1CF 0 |

1D0 0 | 1D1 0 | 1D2 0 | 1D3 0 | 1D4 0 | 1D5 0 | 1D6 0 | 1D7 0 |

1D8 0 | 1D9 0 | 1DA 0 | 1DB 0 | 1DC 0 | 1DD 0 | 1DE 0 | 1DF 0 |

1E0 0 | 1E1 0 | 1E2 0 | 1E3 0 | 1E4 0 | 1E5 0 | 1E6 0 | 1E7 0 |

1E8 0 | 1E9 0 | 1EA 0 | 1EB 0 | 1EC 0 | 1ED 0 | 1EE 0 | 1EF 0 |

1F0 0 | 1F1 0 | 1F2 0 | 1F3 0 | 1F4 0 | 1F5 0 | 1F6 0 | 1F7 0 |

1F8 0 | 1F9 0 | 1FA 0 | 1FB 0 | 1FC 0 | 1FD 0 | 1FE 0 | 1FF 0 |